

REMARKS/ARGUMENTS

In response to the Office Action mailed August 24, 2005, Applicant amends his application and requests reconsideration. No claims are cancelled and claims 17-22 are added so that claims 1-22 are now pending.

New claims 17 and 20 are supported in the original disclosure at least by claims 7, 8, 15, and 16. New claims 18 and 21 are supported by original claims 4 and 12 and the disclosure of the patent application relative to the plasma treatment. New claims 19 and 22 stating that the modifying layer is hydrophilic is clearly supported in the patent application as filed, for example, in the paragraph beginning at page 13 in line 29. The independent claims 1 and 9 are amended by describing the formation of the silicon oxide film on the modifying layer as described in the patent application at page 10, lines 24-27 and elsewhere in the patent application.

The invention concerns a method of making a multilayer structure useful in manufacturing a semiconductor device. Fundamentally, according to the two independent claims, an insulating film is deposited on a semiconductor base material. That insulating film is either predominantly composed of organic siloxane with an organic component that makes no chemical bonds to organic siloxane or simply by a film of organic siloxane. Subsequently, in a plasma treatment, an organic group within the insulating film is removed and a "modifying" layer is formed on the surface of the insulating film. As explained in the patent application, this modifying layer has improved adhesion to silicon oxide, as compared to the untreated insulating film. The improved adhesion is described in the patent application at page 15, lines 11-16. Thereafter, taking advantage of this improved adhesion, the silicon oxide film is deposited on the modifying layer.

The dependent claims describe further steps in the claimed method, including heat treatment of the insulating film, the condition of the plasma treatment, and the composition of the insulating film.

Claims 1, 2, 4, 5, 9, 10, and 12-14 were rejected as anticipated by Aoi (U.S. Patent 6, 387,824). This rejection is respectfully traversed.

With respect to the two independent claims 1 and 9, regardless of what other disclosure may be present in Aoi, it is apparent that Aoi does not describe depositing a silicon oxide film on the modified film following plasma treatment. Therefore, there can be no anticipation of any pending claim by Aoi.

Further, with respect to the newly added claims 18 and 21, it is respectfully pointed out that the plasma treatment in Aoi is in a reducing atmosphere, i.e., not in an oxygen ambient, but in a hydrogen ambient. Therefore, Aoi could not anticipate nor suggest those two newly added claims. Further, with regard to the newly added claims 19 and 21, the hydrophilic layer is not produced in Aoi. Rather, Aoi describes the formation of a hydrophobic layer at column 7, lines 38-48. As the other rejected claims, claims 2, 4, 5, 10, and 12-14, all depend from either claim 1 or claim 9, further discussion of the rejection for anticipation by Aoi of those claims is not necessary nor provided.

Claims 9, 12, and 13 were rejected as anticipated by Han et al. (Published U.S. Patent Application 2002/0102413, hereinafter Han). This rejection is respectfully traversed.

A complete review of Han fails to disclose any description of depositing a silicon oxide film on the dielectric film that is the focus of Han. Thus, Han cannot anticipate claim 9 nor either of dependent claims 12 and 13.

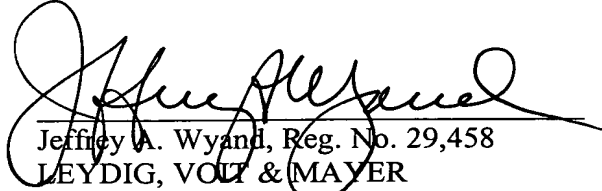
Claims 1, 3-8, 11, 13, 15, and 16 were rejected as obvious over Han, considered by itself. This rejection is respectfully traversed.

Of the rejected claim group, only claim 1 is an independent claim. As already described, Han lacks any description of or any suggestion for depositing a silicon oxide film on the dielectric film that is the focus of attention in Han. Thus, claim 1 cannot be suggested by Han just as claim 9 cannot be anticipated by Han. For the same reason, Han cannot suggest any of claims 3-8, which depend from claim 1, nor any of claims 11, 13, 15, and 16, which depend from claim 9.

Han also fails to describe the formation of a modifying layer that is hydrophilic or that has good adhesion to silicon oxide. Therefore, the rejection based upon Han cannot properly be maintained.

Upon reconsideration, the rejection should be withdrawn and the claims now presented should be allowed.

Respectfully submitted,



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JAW:ves

Amendment or ROA - Regular (Revised 2005 09 01)